



077-US1.ST25.txt
SEQUENCE LISTING

<110> Paz Einat, Louis Deiss and Ruth Maya
<120> ATRX and uses thereof
<130> 68300-A;077/US1
<140> Not Yet Known
<141> 2003-10-30
<150> US 60/422,557
<151> 2002-10-31
<160> 6
<170> PatentIn version 3.2
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<212> DNA
<213> Homo sapiens

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aag ctt cat gac ttc ctt gca cac tca tca gaa gaa tct gaa gaa aca 96
Lys Leu His Asp Phe Leu Ala His Ser Ser Glu Glu Ser Glu Glu Thr
20 25 30

agt tct cct cca cga ctt gca atg aat caa aac aca gat aaa atc agt 144
Ser Ser Pro Pro Arg Leu Ala Met Asn Gln Asn Thr Asp Lys Ile Ser
35 40 45

ggg tct gga agt aac tct gat atg atg gaa aac agc aag gaa gag gga 192
Gly Ser Gly Ser Asn Ser Asp Met Met Glu Asn Ser Lys Glu Glu Gly
50 55 60

act agc tct tca gaa aaa tcc aag tct tca gga tcg tca cga tca aag 240
Thr Ser Ser Glu Lys Ser Lys Ser Ser Gly Ser Ser Arg Ser Lys
65 70 75 80

agg aaa cct tca att gta aca aag tat gta gaa tca gat gat gaa aaa 288
Arg Lys Pro Ser Ile Val Thr Lys Tyr Val Glu Ser Asp Asp Glu Lys
85 90 95

cct ttg gat gat gaa act gta aat gaa gat gcg tct aat gaa aat tca 336
Pro Leu Asp Asp Glu Thr Val Asn Glu Asp Ala Ser Asn Glu Asn Ser
100 105 110

gaa aat gat att act atg cag agc ttg cca aaa ggt aca gtg att gta 384
Glu Asn Asp Ile Thr Met Gln Ser Leu Pro Lys Gly Thr Val Ile Val

077-US1.ST25.txt

115	120	125	
cag cca gag cca gtg ctg aat gaa gac aaa gat gat ttt aaa ggg cct Gln Pro Glu Pro Val Leu Asn Glu Asp Lys Asp Asp Phe Lys Gly Pro 130 135 140			432
gaa ttt aga agc aga agt aaa atg aaa act gaa aat ctc aaa aaa cgc Glu Phe Arg Ser Arg Ser Lys Met Lys Thr Glu Asn Leu Lys Lys Arg 145 150 155 160			480
gga gaa gat ggg ctt cat ggg att gtg agc tgc act gct tgt gga caa Gly Glu Asp Gly Leu His Gly Ile Val Ser Cys Thr Ala Cys Gly Gln 165 170 175			528
cag gtc aat cat ttt caa aaa gat tcc att tat aga cac cct tca ttg Gln Val Asn His Phe Gln Lys Asp Ser Ile Tyr Arg His Pro Ser Leu 180 185 190			576
caa gtt ctt att tgt aag aat tgc ttt aag tat tac atg agt gat gat Gln Val Leu Ile Cys Lys Asn Cys Phe Lys Tyr Tyr Met Ser Asp Asp 195 200 205			624
att agc cgt gac tca gat gga atg gat gaa caa tgt agg tgg tgt gcg Ile Ser Arg Asp Ser Asp Gly Met Asp Glu Gln Cys Arg Trp Cys Ala 210 215 220			672
gaa ggt gga aac ttg att tgt tgt gac ttt tgc cat aat gct ttc tgc Glu Gly Gly Asn Leu Ile Cys Cys Asp Phe Cys His Asn Ala Phe Cys 225 230 235 240			720
aag aaa tgc att cta cgc aac ctt ggt cga aag gag ttg tcc aca ata Lys Lys Cys Ile Leu Arg Asn Leu Gly Arg Lys Glu Leu Ser Thr Ile 245 250 255			768
atg gat gaa aac aac caa tgg tat tgc tac att tgt cac cca gag cct Met Asp Glu Asn Asn Gln Trp Tyr Cys Tyr Ile Cys His Pro Glu Pro 260 265 270			816
ttg ttg gac ttg gtc act gca tgt aac agc gta ttt gag aat tta gaa Leu Leu Asp Leu Val Thr Ala Cys Asn Ser Val Phe Glu Asn Leu Glu 275 280 285			864
cag ttg ttg cag caa aat aag aag aag ata aaa gtt gac agt gaa aag Gln Leu Gln Gln Asn Lys Lys Lys Ile Lys Val Asp Ser Glu Lys 290 295 300			912
agt aat aaa gta tat gaa cat aca tcc aga ttt tct cca aag aag act Ser Asn Lys Val Tyr Glu His Thr Ser Arg Phe Ser Pro Lys Lys Thr 305 310 315 320			960
agt tca aat tgt aat gga gaa gaa aag aaa tta gat gat tcc tgt tct Ser Ser Asn Cys Asn Gly Glu Glu Lys Lys Leu Asp Asp Ser Cys Ser 325 330 335			1008
ggc tct gta acc tac tct tat tcc gca cta att gtg ccc aaa gag atg Gly Ser Val Thr Tyr Ser Tyr Ser Ala Leu Ile Val Pro Lys Glu Met 340 345 350			1056
att aag aag gca aaa aaa ctg att gag acc aca gcc aac atg aac tcc			1104

077-US1.ST25.txt

Ile Lys Lys Ala Lys Lys Leu Ile Glu Thr Thr Ala Asn Met Asn Ser			
355	360	365	
agt tat gtt aaa ttt tta aag cag gca aca gat aat tca gaa atc agt			1152
Ser Tyr Val Lys Phe Leu Lys Gln Ala Thr Asp Asn Ser Glu Ile Ser			
370	375	380	
tct gct aca aaa tta cgt cag ctt aag gct ttt aag tct gtg ttg gct			1200
Ser Ala Thr Lys Leu Arg Gln Leu Lys Ala Phe Lys Ser Val Leu Ala			
385	390	395	400
gat att aag aag gct cat ctt gca ttg gaa gaa gac tta aat tcc gag			1248
Asp Ile Lys Lys Ala His Leu Ala Leu Glu Glu Asp Leu Asn Ser Glu			
405	410	415	
ttt cga gcg atg gat gct gta aac aaa gag aaa aat acc aaa gag cat			1296
Phe Arg Ala Met Asp Ala Val Asn Lys Glu Lys Asn Thr Lys Glu His			
420	425	430	
aaa gtc ata gat gct aag ttt gaa aca aaa gca cga aaa gga gaa aaa			1344
Lys Val Ile Asp Ala Lys Phe Glu Thr Lys Ala Arg Lys Gly Glu Lys			
435	440	445	
cct tgt gct ttg gaa aag aag gat att tca aag tca gaa gct aaa ctt			1392
Pro Cys Ala Leu Glu Lys Lys Asp Ile Ser Lys Ser Glu Ala Lys Leu			
450	455	460	
tca aga aaa cag gta gat agt gag cac atg cat cag aat gtt cca aca			1440
Ser Arg Lys Gln Val Asp Ser Glu His Met His Gln Asn Val Pro Thr			
465	470	475	480
gag gaa caa aga aca aat aaa agy acc ggt ggt gaa cat aag aaa tct			1488
Glu Glu Gln Arg Thr Asn Lys Xaa Thr Gly Gly Glu His Lys Lys Ser			
485	490	495	
gat aga aaa gaa gaa cctcaa tat gaa cct gcc aac act tct gaa gat			1536
Asp Arg Lys Glu Glu Pro Gln Tyr Glu Pro Ala Asn Thr Ser Glu Asp			
500	505	510	
tta gac atg gat att gtg tct gtt cct tcc tca gtt cca gaa gac att			1584
Leu Asp Met Asp Ile Val Ser Val Pro Ser Ser Val Pro Glu Asp Ile			
515	520	525	
ttt gag aat ctt gag act gct atg gaa gtt cag agt tca gtt gat cat			1632
Phe Glu Asn Leu Glu Thr Ala Met Glu Val Gln Ser Ser Val Asp His			
530	535	540	
caa ggg gat ggc agc agt gga act gaa caa gaa gtg gag agt tca tct			1680
Gln Gly Asp Gly Ser Ser Gly Thr Glu Gln Glu Val Glu Ser Ser Ser			
545	550	555	560
gta aaa tta aat att tct tca aaa gac aac aga gga ggt att aaa tca			1728
Val Lys Leu Asn Ile Ser Ser Lys Asp Asn Arg Gly Gly Ile Lys Ser			
565	570	575	
aaa act aca gct aaa gta aca aaa gaa tta tat gtt aaa ctc act cct			1776
Lys Thr Thr Ala Lys Val Thr Lys Glu Leu Tyr Val Lys Leu Thr Pro			
580	585	590	

077-US1.ST25.txt

gtt tcc ctt cct aat tcc cca att aaa ggt gct gat tgt cag gaa gtt Val Ser Leu Pro Asn Ser Pro Ile Lys Gly Ala Asp Cys Gln Glu Val 595 600 605	1824
cca caa gat aaa gat ggc tat aaa agt tgt ggt ctg aac ccc aag tta Pro Gln Asp Lys Asp Gly Tyr Lys Ser Cys Gly Leu Asn Pro Lys Leu 610 615 620	1872
gag aaa tgt gga ctt gga cag gaa aac agt gat aat gag cat ttg gtt Glu Lys Cys Gly Leu Gly Gln Glu Asn Ser Asp Asn Glu His Leu Val 625 630 635 640	1920
gaa aat gaa gtt tca tta ctt tta gag gaa tct gat ctt cg ^g aga tcc Glu Asn Glu Val Ser Leu Leu Glu Ser Asp Leu Arg Arg Ser 645 650 655	1968
cca cgt gta aag act aca ccc ttg agg cga cc ^g aca gaa act aac cct Pro Arg Val Lys Thr Pro Leu Arg Arg Pro Thr Glu Thr Asn Pro 660 665 670	2016
gta aca tct aat tca gat gaa gaa tgt aat gaa aca gtt aag gag aaa Val Thr Ser Asn Ser Asp Glu Glu Cys Asn Glu Thr Val Lys Glu Lys 675 680 685	2064
caa aaa cta tca gtt cca gtg aga aaa aag gat aag cgt aat tct tct Gln Lys Leu Ser Val Pro Val Arg Lys Lys Asp Lys Arg Asn Ser Ser 690 695 700	2112
gac agt gct ata gat aat cct aag cct aat aaa ttg cca aaa tct aag Asp Ser Ala Ile Asp Asn Pro Lys Pro Asn Lys Leu Pro Lys Ser Lys 705 710 715 720	2160
caa tca gag act gtg gat caa aat tca gat tct gat gaa atg cta gca Gln Ser Glu Thr Val Asp Gln Asn Ser Asp Ser Asp Glu Met Leu Ala 725 730 735	2208
atc ctc aaa ggg gtg agc agg atg agt cac agt tct tct tca gat act Ile Leu Lys Gly Val Ser Arg Met Ser His Ser Ser Ser Asp Thr 740 745 750	2256
gat att aat gaa att cat aca aac cat aag act ttg tat gat tta aag Asp Ile Asn Glu Ile His Thr Asn His Lys Thr Leu Tyr Asp Leu Lys 755 760 765	2304
act cag gcg ggg aaa gat gat aaa gga aaa agg aaa cga aaa agt tct Thr Gln Ala Gly Lys Asp Asp Lys Gly Lys Arg Lys Arg Lys Ser Ser 770 775 780	2352
aca tct ggc tca gat ttt gat act aaa aag ggc aaa tca gct aag agc Thr Ser Gly Ser Asp Phe Asp Thr Lys Lys Gly Lys Ser Ala Lys Ser 785 790 795 800	2400
tct ata att tct aaa aag aaa cga caa acc cag tct gag tct tct aat Ser Ile Ile Ser Lys Lys Lys Arg Gln Thr Gln Ser Glu Ser Ser Asn 805 810 815	2448
tat gac tca gaa tta gaa aaa gag ata aag agc atg agt aaa att ggt Tyr Asp Ser Glu Leu Glu Lys Glu Ile Lys Ser Met Ser Lys Ile Gly 820 825 830	2496

077-US1.ST25.txt

gct gcc aga acc acc aaa aaa aga att cca aat aca aaa gat ttt gac Ala Ala Arg Thr Thr Lys Lys Arg Ile Pro Asn Thr Lys Asp Phe Asp 835 840 845	2544
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cac aaa aat ttg aag acc tca caa gaa gga tca tct gat gat gct gaa His Lys Asn Leu Lys Thr Ser Gln Glu Gly Ser Ser Asp Asp Ala Glu 865 870 875 880	2640
aga aaa caa gag aga gag act ttc tct tca gca gaa ggc aca gtt gat Arg Lys Gln Glu Arg Glu Thr Phe Ser Ser Ala Glu Gly Thr Val Asp 885 890 895	2688
aaa gac acg acc atc atg gaa tta aga gat cga ctt cct aag aag cag Lys Asp Thr Ile Met Glu Leu Arg Asp Arg Leu Pro Lys Lys Gln 900 905 910	2736
caa gca agt gct tcc act gat ggt gtc gat aag ctt tct ggg aaa gag Gln Ala Ser Ala Ser Thr Asp Gly Val Asp Lys Leu Ser Gly Lys Glu 915 920 925	2784
cag agt ttt act tct ttg gaa gtt aga aaa gtt gct gaa act aaa gaa Gln Ser Phe Thr Ser Leu Glu Val Arg Lys Val Ala Glu Thr Lys Glu 930 935 940	2832
aag agc aag cat ctc aaa acc aaa aca tgt aaa aaa gta cag gat ggc Lys Ser Lys His Leu Lys Thr Lys Cys Lys Lys Val Gln Asp Gly 945 950 955 960	2880
tta tct gat att gca gag aaa ttc cta aag aaa gac cag agc gat gaa Leu Ser Asp Ile Ala Glu Lys Phe Leu Lys Lys Asp Gln Ser Asp Glu 965 970 975	2928
act tct gaa gat gat aaa aag cag agc aaa aag gga act gaa gaa aaa Thr Ser Glu Asp Asp Lys Lys Gln Ser Lys Lys Gly Thr Glu Glu Lys 980 985 990	2976
aag aaa cct tca gac ttt aag aaa aaa gta att aaa atg gaa caa cag Lys Lys Pro Ser Asp Phe Lys Lys Lys Val Ile Lys Met Glu Gln Gln 995 1000 1005	3024
tat gaa tct tca tct gat ggc act gaa aag tta cct gag cga gaa Tyr Glu Ser Ser Ser Asp Gly Thr Glu Lys Leu Pro Glu Arg Glu 1010 1015 1020	3069
gaa att tgt cat ttt cct aag ggc ata aaa caa att aag aat gga Glu Ile Cys His Phe Pro Lys Gly Ile Lys Gln Ile Lys Asn Gly 1025 1030 1035	3114
aca act gat gga gaa aag aaa agt aaa aaa ata aga gat aaa act Thr Thr Asp Gly Glu Lys Lys Ser Lys Lys Ile Arg Asp Lys Thr 1040 1045 1050	3159
tct aaa aag aag gat gaa tta tct gat tat gct gag aag tca aca Ser Lys Lys Lys Asp Glu Leu Ser Asp Tyr Ala Glu Lys Ser Thr	3204

077-US1.ST25.txt

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ggg aaa gga gat agt tgt gac	tct tca gag gat aaa	aag agt aag	3249
Gly Lys Gly Asp Ser Cys Asp	Ser Ser Glu Asp Lys	Lys Ser Lys	
1070	1075	1080	
aat gga gca tat ggt aga gag	aag aaa agg tgc aag	ttg ctt gga	3294
Asn Gly Ala Tyr Gly Arg Glu	Lys Lys Arg Cys Lys	Leu Leu Gly	
1085	1090	1095	
aag agt tca agg aag aga caa	gat tgc tca tca tct	gat act gag	3339
Lys Ser Ser Arg Lys Arg Gln	Asp Cys Ser Ser Ser	Asp Thr Glu	
1100	1105	1110	
aaa tat tcc atg aaa gaa gat	ggt tgt aac tct tct	gat aag aga	3384
Lys Tyr Ser Met Lys Glu Asp	Gly Cys Asn Ser Ser	Asp Lys Arg	
1115	1120	1125	
ctg aaa aga ata gaa ttg agg	gaa aga aga aat tta	agt tca aag	3429
Leu Lys Arg Ile Glu Leu Arg	Glu Arg Arg Asn Leu	Ser Ser Lys	
1130	1135	1140	
aga aat act aag gaa ata caa	agt ggc tca tca tca	tct gat gct	3474
Arg Asn Thr Lys Glu Ile Gln	Ser Gly Ser Ser Ser	Ser Asp Ala	
1145	1150	1155	
gag gaa agt tct gaa gat aat	aaa aag aag aag caa	aga act tca	3519
Glu Glu Ser Ser Glu Asp Asn	Lys Lys Lys Lys Gln	Arg Thr Ser	
1160	1165	1170	
tct aaa aag aag gca gtc att	gtc aag gag aaa aag	aga aac tcc	3564
Ser Lys Lys Lys Ala Val Ile	Val Lys Glu Lys Lys	Arg Asn Ser	
1175	1180	1185	
cta aga aca agc act aaa agg	aag caa gct gac att	aca tcc tca	3609
Leu Arg Thr Ser Thr Lys Arg	Lys Gln Ala Asp Ile	Thr Ser Ser	
1190	1195	1200	
tct tct tct gat ata gaa gat	gat gat cag aat tct	ata ggt gag	3654
Ser Ser Ser Asp Ile Glu Asp	Asp Asp Gln Asn Ser	Ile Gly Glu	
1205	1210	1215	
gga agc agc gat gaa cag aaa	att aag cct gtc act	gaa aat tta	3699
Gly Ser Ser Asp Glu Gln Lys	Ile Lys Pro Val Thr	Glu Asn Leu	
1220	1225	1230	
gtg ctg tct tca cat act gga	ttt tgc caa tct tca	gga gat gaa	3744
Val Leu Ser Ser His Thr Gly	Phe Cys Gln Ser Ser	Gly Asp Glu	
1235	1240	1245	
gcc tta tct aaa tca gtg cct	gtc aca gtg gat gat	gat gat gac	3789
Ala Leu Ser Lys Ser Val Pro	Val Thr Val Asp Asp	Asp Asp Asp	
1250	1255	1260	
gac aat gat cct gag aat aga	att gcc aag aag atg	ctt tta gaa	3834
Asp Asn Asp Pro Glu Asn Arg	Ile Ala Lys Lys Met	Leu Leu Glu	
1265	1270	1275	
gaa att aaa gcc aat ctt tcc	tct gat gag gat gga	tct tca gat	3879

077-US1.ST25.txt

Glu	Ile	Lys	Ala	Asn	Leu	Ser	Ser	Asp	Glu	Asp	Gly	Ser	Ser	Asp	
1280					1285						1290				
gat	gag	cca	gaa	gaa	ggg	aaa	aaa	aga	act	gga	aaa	caa	aat	gaa	3924
Asp	Glu	Pro	Glu	Glu	Gly	Lys	Lys	Arg	Thr	Gly	Lys	Gln	Asn	Glu	
1295					1300						1305				
gaa	aac	cca	gga	gat	gag	gaa	gca	aaa	aat	caa	gtc	aat	tct	gaa	3969
Glu	Asn	Pro	Gly	Asp	Glu	Glu	Ala	Lys	Asn	Gln	Val	Asn	Ser	Glu	
1310					1315						1320				
tca	gat	tca	gat	tct	gaa	gaa	tct	aag	aag	cca	aga	tac	aga	cat	4014
Ser	Asp	Ser	Asp	Ser	Glu	Glu	Ser	Lys	Lys	Pro	Arg	Tyr	Arg	His	
1325					1330						1335				
agg	ctt	ttg	cgg	cac	aaa	ttg	act	gtg	agt	gac	gga	gaa	tct	gga	4059
Arg	Leu	Leu	Arg	His	Lys	Leu	Thr	Val	Ser	Asp	Gly	Glu	Ser	Gly	
1340					1345						1350				
gaa	gaa	aaa	aag	aca	aag	cct	aaa	gag	cat	aaa	gaa	gtc	aaa	ggc	4104
Glu	Glu	Lys	Lys	Thr	Lys	Pro	Lys	Glu	His	Lys	Glu	Val	Lys	Gly	
1355					1360						1365				
aga	aac	aga	aga	aag	gtg	agc	agt	gaa	gat	tca	gaa	gat	tct	gat	4149
Arg	Asn	Arg	Arg	Lys	Val	Ser	Ser	Glu	Asp	Ser	Glu	Asp	Ser	Asp	
1370					1375						1380				
ttt	cag	gaa	tca	gga	gtt	agt	gaa	gaa	gtt	agt	gaa	tcc	gaa	gat	4194
Phe	Gln	Glu	Ser	Gly	Val	Ser	Glu	Glu	Val	Ser	Glu	Ser	Glu	Asp	
1385					1390						1395				
gaa	cag	cgg	ccc	aga	aca	agg	tct	gca	aag	aaa	gca	gag	ttg	gaa	4239
Glu	Gln	Arg	Pro	Arg	Thr	Arg	Ser	Ala	Lys	Lys	Ala	Glu	Leu	Glu	
1400					1405						1410				
gaa	aat	cag	cgg	agc	tat	aaa	cag	aaa	aag	aaa	agg	cga	cgt	att	4284
Glu	Asn	Gln	Arg	Ser	Tyr	Lys	Gln	Lys	Lys	Lys	Arg	Arg	Arg	Ile	
1415					1420						1425				
aag	gtt	caa	gaa	gat	tca	tcc	agt	gaa	aac	aag	agt	aat	tct	gag	4329
Lys	Val	Gln	Glu	Asp	Ser	Ser	Ser	Glu	Asn	Lys	Ser	Asn	Ser	Glu	
1430					1435						1440				
gaa	gaa	gag	gag	gaa	aaa	gaa	gag	gag	gag	gaa	gag	gag	gag	gag	4374
Glu	Glu	Glu	Glu	Lys	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	
1445					1450						1455				
gag	gaa	gag	gag	gag	gaa	gat	gaa	aat	gat	gat	tcc	aag	tct	cct	4419
Glu	Glu	Glu	Glu	Glu	Asp	Glu	Asn	Asp	Asp	Ser	Lys	Ser	Pro		
1460					1465						1470				
gga	aaa	ggc	aga	aag	aaa	att	cgg	aag	att	ctt	aaa	gat	gat	aaa	4464
Gly	Lys	Gly	Arg	Lys	Lys	Ile	Arg	Lys	Ile	Leu	Lys	Asp	Asp	Lys	
1475					1480						1485				
ctg	aga	aca	gaa	aca	caa	aat	gct	ctt	aag	gaa	gag	gaa	gag	aga	4509
Leu	Arg	Thr	Glu	Thr	Gln	Asn	Ala	Leu	Lys	Glu	Glu	Glu	Glu	Arg	
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077-US1.ST25.txt

cga aaa cgt att gct gag agg	gag cgt gag cga gaa	aaa ttg aga	4554
Arg Lys Arg Ile Ala Glu Arg	Glu Arg Glu Arg Glu	Lys Leu Arg	
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gag gtg ata gaa att gaa gat	gct tca ccc acc aag	tgt cca ata	4599
Glu Val Ile Glu Ile Glu Asp	Ala Ser Pro Thr Lys	Cys Pro Ile	
1520	1525	1530	
aca acc aag ttg gtt tta gat	gaa gat gaa gaa acc	aaa gaa cct	4644
Thr Thr Lys Leu Val Leu Asp	Glu Asp Glu Glu Thr	Lys Glu Pro	
1535	1540	1545	
tta gtg cag gtt cat aga aat	atg gtt atc aaa ttg	aaa ccc cat	4689
Leu Val Gln Val His Arg Asn	Met Val Ile Lys Leu	Lys Pro His	
1550	1555	1560	
caa gta gat ggt gtt cag ttt	atg tgg gat tgc tgc	tgt gag tct	4734
Gln Val Asp Gly Val Gln Phe	Met Trp Asp Cys Cys	Cys Glu Ser	
1565	1570	1575	
gtg aaa aaa aca aag aaa tct	cca ggt tca gga tgc	att ctt gcc	4779
Val Lys Lys Thr Lys Lys Ser	Pro Gly Ser Gly Cys	Ile Leu Ala	
1580	1585	1590	
cac tgt atg ggc ctt ggt aag	act tta cag gtg gta	agt ttt ctt	4824
His Cys Met Gly Leu Gly Lys	Thr Leu Gln Val Val	Ser Phe Leu	
1595	1600	1605	
cat aca gtt ctt ttg tgt gac	aaa ctg gat ttc agc	acg gcg tta	4869
His Thr Val Leu Leu Cys Asp	Lys Leu Asp Phe Ser	Thr Ala Leu	
1610	1615	1620	
gtg gtt tgt cct ctt aat act	gct ttg aat tgg atg	aat gaa ttt	4914
Val Val Cys Pro Leu Asn Thr	Ala Leu Asn Trp Met	Asn Glu Phe	
1625	1630	1635	
gag aag tgg caa gag gga tta	aaa gat gat gag aag	ctt gag gtt	4959
Glu Lys Trp Gln Glu Gly Leu	Lys Asp Asp Glu Lys	Leu Glu Val	
1640	1645	1650	
tct gaa tta gca act gtg aaa	cgt cct cag gag aga	agc tac atg	5004
Ser Glu Leu Ala Thr Val Lys	Arg Pro Gln Glu Arg	Ser Tyr Met	
1655	1660	1665	
ctg cag agg tgg caa gaa gat	ggt ggt gtt atg atc	ata ggc tat	5049
Leu Gln Arg Trp Gln Glu Asp	Gly Gly Val Met Ile	Ile Gly Tyr	
1670	1675	1680	
gag atg tat aga aat ctt gct	caa gga agg aat gtg	aag agt cgg	5094
Glu Met Tyr Arg Asn Leu Ala	Gln Gly Arg Asn Val	Lys Ser Arg	
1685	1690	1695	
aaa ctt aaa gaa ata ttt aac	aaa gct ttg gtt gat	cca ggc cct	5139
Lys Leu Lys Glu Ile Phe Asn	Lys Ala Leu Val Asp	Pro Gly Pro	
1700	1705	1710	
gat ttt gtt gtt tgt gat gaa	ggc cat att cta aaa	aat gaa gca	5184
Asp Phe Val Val Cys Asp Glu	Gly His Ile Leu Lys	Asn Glu Ala	
1715	1720	1725	

077-US1.ST25.txt

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Ser	Ala	Val	Ser	Lys	Ala	Met	Asn	Ser	Ile	Arg	Ser	Arg	Arg	Arg	
1730						1735					1740				
att	att	tta	aca	gga	aca	cca	ctt	caa	aat	aac	cta	att	gag	tat	5274
Ile	Ile	Leu	Thr	Gly	Thr	Pro	Leu	Gln	Asn	Asn	Leu	Ile	Glu	Tyr	
1745						1750					1755				
cat	tgt	atg	gtt	aat	ttt	atc	aag	gaa	aat	tta	ctt	gga	tcc	att	5319
His	Cys	Met	Val	Asn	Phe	Ile	Lys	Glu	Asn	Leu	Leu	Gly	Ser	Ile	
1760						1765					1770				
aag	gag	ttc	agg	aat	aga	ttt	ata	aat	cca	att	caa	aat	ggt	cag	5364
Lys	Glu	Phe	Arg	Asn	Arg	Phe	Ile	Asn	Pro	Ile	Gln	Asn	Gly	Gln	
1775						1780					1785				
tgt	gca	gat	tct	acc	atg	gta	gat	gtc	aga	gtg	atg	aaa	aaa	cgt	5409
Cys	Ala	Asp	Ser	Thr	Met	Val	Asp	Val	Arg	Val	Met	Lys	Lys	Arg	
1790						1795					1800				
gct	cac	att	ctc	tat	gag	atg	tta	gct	gga	tgt	gtt	cag	agg	aaa	5454
Ala	His	Ile	Leu	Tyr	Glu	Met	Leu	Ala	Gly	Cys	Val	Gln	Arg	Lys	
1805						1810					1815				
gat	tat	aca	gca	tta	aca	aaa	ttc	ttg	cct	cca	aaa	cac	gaa	tat	5499
Asp	Tyr	Thr	Ala	Leu	Thr	Lys	Phe	Leu	Pro	Pro	Lys	His	Glu	Tyr	
1820						1825					1830				
gtg	tta	gct	gtg	aga	atg	act	tct	att	cag	tgc	aag	ctc	tat	cag	5544
Val	Leu	Ala	Val	Arg	Met	Thr	Ser	Ile	Gln	Cys	Lys	Leu	Tyr	Gln	
1835						1840					1845				
tac	tac	tta	gat	cac	tta	aca	ggt	gtg	ggc	aat	aat	agt	gaa	ggt	5589
Tyr	Tyr	Leu	Asp	His	Leu	Thr	Gly	Val	Gly	Asn	Asn	Ser	Glu	Gly	
1850						1855					1860				
gga	aga	gga	aag	gca	ggt	gca	aag	ctt	ttc	caa	gat	ttt	cag	atg	5634
Gly	Arg	Gly	Lys	Ala	Gly	Ala	Lys	Leu	Phe	Gln	Asp	Phe	Gln	Met	
1865						1870					1875				
tta	agt	aga	ata	tgg	act	cat	cct	tgg	tgt	ttg	cag	cta	gac	tac	5679
Leu	Ser	Arg	Ile	Trp	Thr	His	Pro	Trp	Cys	Leu	Gln	Leu	Asp	Tyr	
1880						1885					1890				
att	agc	aaa	gaa	aat	aag	ggt	tat	ttt	gat	gaa	gac	agt	atg	gat	5724
Ile	Ser	Lys	Glu	Asn	Lys	Gly	Tyr	Phe	Asp	Glu	Asp	Ser	Met	Asp	
1895						1900					1905				
gaa	ttt	ata	gcc	tca	gat	tct	gat	gaa	acc	tcc	atg	agt	tta	agc	5769
Glu	Phe	Ile	Ala	Ser	Asp	Ser	Asp	Glu	Thr	Ser	Met	Ser	Leu	Ser	
1910						1915					1920				
tcc	gat	gat	tat	aca	aaa	aag	aag	aaa	aaa	ggg	aaa	aag	ggg	aaa	5814
Ser	Asp	Asp	Tyr	Thr	Lys	Lys	Lys	Lys	Lys	Gly	Lys	Lys	Gly	Lys	
1925						1930					1935				
aaa	gat	agt	agc	tca	agt	gga	agt	ggc	agt	gac	aat	gat	gtt	gaa	5859
Lys	Asp	Ser	Ser	Ser	Ser	Gly	Ser	Gly	Ser	Asp	Asn	Asp	Val	Glu	

077-US1.ST25.txt

1940	1945	1950	
gtg att aag gtc tgg aat tca	aga tct cgg gga ggt	ggt gaa gga	5904
Val Ile Lys Val Trp Asn Ser	Arg Ser Arg Gly Gly	Gly Glu Gly	
1955 1960	1965		
aat gtg gat gaa aca gga aac	aat cct tct gtt tct	tta aaa ctg	5949
Asn Val Asp Glu Thr Gly Asn	Asn Pro Ser Val Ser	Leu Lys Leu	
1970 1975	1980		
gaa gaa agt aaa gct act tct	tct tct aat cca agc	agc cca gct	5994
Glu Glu Ser Lys Ala Thr Ser	Ser Ser Asn Pro Ser	Ser Pro Ala	
1985 1990	1995		
cca gac tgg tac aaa gat ttt	gtt aca gat gct gat	gct gag gtt	6039
Pro Asp Trp Tyr Lys Asp Phe	Val Thr Asp Ala Asp	Ala Glu Val	
2000 2005	2010		
tta gag cat tct ggg aaa atg	gta ctt ctc ttt gaa	att ctt cga	6084
Leu Glu His Ser Gly Lys Met	Val Leu Leu Phe Glu	Ile Leu Arg	
2015 2020	2025		
atg gca gag gaa att ggg gat	aaa gtc ctt gtt ttc	agc cag tcc	6129
Met Ala Glu Glu Ile Gly Asp	Lys Val Leu Val Phe	Ser Gln Ser	
2030 2035	2040		
ctc ata tct ctg gac ttg att	gaa gat ttt ctt gaa	tta gct agt	6174
Leu Ile Ser Leu Asp Leu Ile	Glu Asp Phe Leu Glu	Leu Ala Ser	
2045 2050	2055		
agg gag aag aca gaa gat aaa	gat aaa ccc ctt att	tat aaa ggt	6219
Arg Glu Lys Thr Glu Asp Lys	Asp Lys Pro Leu Ile	Tyr Lys Gly	
2060 2065	2070		
gag ggg aag tgg ctt cga aac	att gac tat tac cgt	tta gat ggt	6264
Glu Gly Lys Trp Leu Arg Asn	Ile Asp Tyr Tyr Arg	Leu Asp Gly	
2075 2080	2085		
tcc act act gca cag tca agg	aag aag tgg gct gaa	gaa ttt aat	6309
Ser Thr Thr Ala Gln Ser Arg	Lys Lys Trp Ala Glu	Glu Phe Asn	
2090 2095	2100		
gat gaa act aat gtg aga gga	cga tta ttt atc att	tct act aaa	6354
Asp Glu Thr Asn Val Arg Gly	Arg Leu Phe Ile Ile	Ser Thr Lys	
2105 2110	2115		
gca gga tct cta gga att aat	ctg gta gct gct aat	cga gta att	6399
Ala Gly Ser Leu Gly Ile Asn	Leu Val Ala Ala Asn	Arg Val Ile	
2120 2125	2130		
ata ttc gac gct tct tgg aat	cca tct tat gac atc	cag agt ata	6444
Ile Phe Asp Ala Ser Trp Asn	Pro Ser Tyr Asp Ile	Gln Ser Ile	
2135 2140	2145		
ttc aga gtt tat cgc ttt gga	caa act aag cct gtt	tat gta tat	6489
Phe Arg Val Tyr Arg Phe Gly	Gln Thr Lys Pro Val	Tyr Val Tyr	
2150 2155	2160		
agg ttc tta gct cag gga acc	atg gaa gat aag att	tat gat cgg	6534

077-US1.ST25.txt

Arg	Phe	Leu	Ala	Gln	Gly	Thr	Met	Glu	Asp	Lys	Ile	Tyr	Asp	Arg	
2165							2170					2175			
caa	gta	act	aag	cag	tca	ctg	tct	ttt	cga	gtt	gtt	gat	cag	cag	6579
Gln	Val	Thr	Lys	Gln	Ser	Leu	Ser	Phe	Arg	Val	Val	Asp	Gln	Gln	
2180							2185					2190			
cag	gtg	gag	cgt	cat	ttt	act	atg	aat	gag	ctt	act	gaa	ctt	tat	6624
Gln	Val	Glu	Arg	His	Phe	Thr	Met	Asn	Glu	Leu	Thr	Glu	Leu	Tyr	
2195							2200					2205			
act	ttt	gag	cca	gac	tta	tta	gat	gac	cct	aat	tca	gaa	aag	aag	6669
Thr	Phe	Glu	Pro	Asp	Leu	Leu	Asp	Asp	Pro	Asn	Ser	Glu	Lys	Lys	
2210							2215					2220			
aag	aag	agg	gat	act	ccc	atg	ctg	cca	aag	gat	acc	ata	ctt	gca	6714
Lys	Lys	Arg	Asp	Thr	Pro	Met	Leu	Pro	Lys	Asp	Thr	Ile	Leu	Ala	
2225							2230					2235			
gag	ctc	ctt	cag	ata	cat	aaa	gaa	cac	att	gta	gga	tac	cat	gaa	6759
Glu	Leu	Leu	Gln	Ile	His	Lys	Glu	His	Ile	Val	Gly	Tyr	His	Glu	
2240							2245					2250			
cat	gat	tct	ctt	ttg	gac	cac	aaa	gaa	gaa	gaa	gag	ttg	act	gaa	6804
His	Asp	Ser	Leu	Leu	Asp	His	Lys	Glu	Glu	Glu	Glu	Leu	Thr	Glu	
2255							2260					2265			
gaa	gaa	aga	aaa	gca	gct	tgg	gct	gag	tat	gaa	gca	gag	aag	aag	6849
Glu	Glu	Arg	Lys	Ala	Ala	Trp	Ala	Glu	Tyr	Glu	Ala	Glu	Lys	Lys	
2270							2275					2280			
gta	ctg	acc	atg	cgt	ttc	aac	ata	cca	act	ggg	acc	aat	tta	ccc	6894
Val	Leu	Thr	Met	Arg	Phe	Asn	Ile	Pro	Thr	Gly	Thr	Asn	Leu	Pro	
2285							2290					2295			
cct	gtc	agt	ttc	aac	tct	caa	act	cct	tat	att	cct	ttc	aat	ttg	6939
Pro	Val	Ser	Phe	Asn	Ser	Gln	Thr	Pro	Tyr	Ile	Pro	Phe	Asn	Leu	
2300							2305					2310			
gga	gcc	ctg	tca	gca	atg	agt	aat	caa	cag	ctg	gag	gac	ctc	att	6984
Gly	Ala	Leu	Ser	Ala	Met	Ser	Asn	Gln	Gln	Leu	Glu	Asp	Leu	Ile	
2315							2320					2325			
aat	caa	gga	aga	gaa	aaa	gtt	gta	gaa	gca	aca	aac	agt	gtg	aca	7029
Asn	Gln	Gly	Arg	Glu	Lys	Val	Val	Glu	Ala	Thr	Asn	Ser	Val	Thr	
2330							2335					2340			
gca	gtg	agg	att	caa	cct	ctt	gag	gat	ata	att	tca	gct	gta	tgg	7074
Ala	Val	Arg	Ile	Gln	Pro	Leu	Glu	Asp	Ile	Ile	Ser	Ala	Val	Trp	
2345							2350					2355			
aag	gag	aac	atg	aat	ctc	tca	gag	gcc	caa	gta	cag	gcg	tta	gca	7119
Lys	Glu	Asn	Met	Asn	Leu	Ser	Glu	Ala	Gln	Val	Gln	Ala	Leu	Ala	
2360							2365					2370			
tta	agt	aga	caa	gcc	agc	cag	gag	ctt	gat	gtt	aaa	cga	aga	gaa	7164
Leu	Ser	Arg	Gln	Ala	Ser	Gln	Glu	Leu	Asp	Val	Lys	Arg	Arg	Glu	
2375							2380					2385			

077-US1.ST25.txt

gca atc tac aat gat gta ttg	aca aaa caa cag atg	tta atc agc	7209
Ala Ile Tyr Asn Asp Val Leu	Thr Lys Gln Gln Met	Leu Ile Ser	
2390	2395	2400	
tgt gtt cag cga ata ctt atg	aac aga agg ctc cag	cag cag tac	7254
Cys Val Gln Arg Ile Leu Met	Asn Arg Arg Leu Gln	Gln Gln Tyr	
2405	2410	2415	
aat cag cag caa cag caa caa	atg act tat caa caa	gca aca ctg	7299
Asn Gln Gln Gln Gln Gln	Met Thr Tyr Gln Gln	Ala Thr Leu	
2420	2425	2430	
ggt cac ctc atg atg cca aag	ccc cca aat ttg atc	atg aat cct	7344
Gly His Leu Met Met Pro Lys	Pro Pro Asn Leu Ile	Met Asn Pro	
2435	2440	2445	
tct aac tac cag cag att gat	atg aga gga atg tat	cag cca gtg	7389
Ser Asn Tyr Gln Gln Ile Asp	Met Arg Gly Met Tyr	Gln Pro Val	
2450	2455	2460	
gct ggt ggt atg cag cca cca	cca tta cag cgt gca	cca ccc cca	7434
Ala Gly Gly Met Gln Pro Pro	Pro Leu Gln Arg Ala	Pro Pro Pro	
2465	2470	2475	
atg aga agc aaa aat cca gga	cct tcc caa ggg aaa	tca atg tga	7479
Met Arg Ser Lys Asn Pro Gly	Pro Ser Gln Gly Lys	Ser Met	
2480	2485	2490	

<210> 2
<211> 2492
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (488)..(488)
<223> The 'Xaa' at location 488 stands for Ser.

<400> 2

Met Thr Ala Glu Pro Met Ser Glu Ser Lys Leu Asn Thr Leu Val Gln
1 5 10 15

Lys Leu His Asp Phe Leu Ala His Ser Ser Glu Glu Ser Glu Glu Thr
20 25 30

Ser Ser Pro Pro Arg Leu Ala Met Asn Gln Asn Thr Asp Lys Ile Ser
35 40 45

Gly Ser Gly Ser Asn Ser Asp Met Met Glu Asn Ser Lys Glu Glu Gly
50 55 60

Thr Ser Ser Ser Glu Lys Ser Lys Ser Ser Gly Ser Ser Arg Ser Lys
65 70 75 80

077-US1.ST25.txt

Arg Lys Pro Ser Ile Val Thr Lys Tyr Val Glu Ser Asp Asp Glu Lys
85 90 95

Pro Leu Asp Asp Glu Thr Val Asn Glu Asp Ala Ser Asn Glu Asn Ser
100 105 110

Glu Asn Asp Ile Thr Met Gln Ser Leu Pro Lys Gly Thr Val Ile Val
115 120 125

Gln Pro Glu Pro Val Leu Asn Glu Asp Lys Asp Asp Phe Lys Gly Pro
130 135 140

Glu Phe Arg Ser Arg Ser Lys Met Lys Thr Glu Asn Leu Lys Lys Arg
145 150 155 160

Gly Glu Asp Gly Leu His Gly Ile Val Ser Cys Thr Ala Cys Gly Gln
165 170 175

Gln Val Asn His Phe Gln Lys Asp Ser Ile Tyr Arg His Pro Ser Leu
180 185 190

Gln Val Leu Ile Cys Lys Asn Cys Phe Lys Tyr Tyr Met Ser Asp Asp
195 200 205

Ile Ser Arg Asp Ser Asp Gly Met Asp Glu Gln Cys Arg Trp Cys Ala
210 215 220

Glu Gly Gly Asn Leu Ile Cys Cys Asp Phe Cys His Asn Ala Phe Cys
225 230 235 240

Lys Lys Cys Ile Leu Arg Asn Leu Gly Arg Lys Glu Leu Ser Thr Ile
245 250 255

Met Asp Glu Asn Asn Gln Trp Tyr Cys Tyr Ile Cys His Pro Glu Pro
260 265 270

Leu Leu Asp Leu Val Thr Ala Cys Asn Ser Val Phe Glu Asn Leu Glu
275 280 285

Gln Leu Leu Gln Gln Asn Lys Lys Lys Ile Lys Val Asp Ser Glu Lys
290 295 300

Ser Asn Lys Val Tyr Glu His Thr Ser Arg Phe Ser Pro Lys Lys Thr

077-US1.ST25.txt

305

310

315

320

Ser Ser Asn Cys Asn Gly Glu Glu Lys Lys Leu Asp Asp Ser Cys Ser
325 330 335

Gly Ser Val Thr Tyr Ser Tyr Ser Ala Leu Ile Val Pro Lys Glu Met
340 345 350

Ile Lys Lys Ala Lys Lys Leu Ile Glu Thr Thr Ala Asn Met Asn Ser
355 360 365

Ser Tyr Val Lys Phe Leu Lys Gln Ala Thr Asp Asn Ser Glu Ile Ser
370 375 380

Ser Ala Thr Lys Leu Arg Gln Leu Lys Ala Phe Lys Ser Val Leu Ala
385 390 395 400

Asp Ile Lys Lys Ala His Leu Ala Leu Glu Glu Asp Leu Asn Ser Glu
405 410 415

Phe Arg Ala Met Asp Ala Val Asn Lys Glu Lys Asn Thr Lys Glu His
420 425 430

Lys Val Ile Asp Ala Lys Phe Glu Thr Lys Ala Arg Lys Gly Glu Lys
435 440 445

Pro Cys Ala Leu Glu Lys Lys Asp Ile Ser Lys Ser Glu Ala Lys Leu
450 455 460

Ser Arg Lys Gln Val Asp Ser Glu His Met His Gln Asn Val Pro Thr
465 470 475 480

Glu Glu Gln Arg Thr Asn Lys Xaa Thr Gly Gly Glu His Lys Lys Ser
485 490 495

Asp Arg Lys Glu Glu Pro Gln Tyr Glu Pro Ala Asn Thr Ser Glu Asp
500 505 510

Leu Asp Met Asp Ile Val Ser Val Pro Ser Ser Val Pro Glu Asp Ile
515 520 525

Phe Glu Asn Leu Glu Thr Ala Met Glu Val Gln Ser Ser Val Asp His
530 535 540

077-US1.ST25.txt

Gln Gly Asp Gly Ser Ser Gly Thr Glu Gln Glu Val Glu Ser Ser Ser
545 550 555 560

Val Lys Leu Asn Ile Ser Ser Lys Asp Asn Arg Gly Gly Ile Lys Ser
565 570 575

Lys Thr Thr Ala Lys Val Thr Lys Glu Leu Tyr Val Lys Leu Thr Pro
580 585 590

Val Ser Leu Pro Asn Ser Pro Ile Lys Gly Ala Asp Cys Gln Glu Val
595 600 605

Pro Gln Asp Lys Asp Gly Tyr Lys Ser Cys Gly Leu Asn Pro Lys Leu
610 615 620

Glu Lys Cys Gly Leu Gly Gln Glu Asn Ser Asp Asn Glu His Leu Val
625 630 635 640

Glu Asn Glu Val Ser Leu Leu Leu Glu Glu Ser Asp Leu Arg Arg Ser
645 650 655

Pro Arg Val Lys Thr Thr Pro Leu Arg Arg Pro Thr Glu Thr Asn Pro
660 665 670

Val Thr Ser Asn Ser Asp Glu Glu Cys Asn Glu Thr Val Lys Glu Lys
675 680 685

Gln Lys Leu Ser Val Pro Val Arg Lys Lys Asp Lys Arg Asn Ser Ser
690 695 700

Asp Ser Ala Ile Asp Asn Pro Lys Pro Asn Lys Leu Pro Lys Ser Lys
705 710 715 720

Gln Ser Glu Thr Val Asp Gln Asn Ser Asp Ser Asp Glu Met Leu Ala
725 730 735

Ile Leu Lys Gly Val Ser Arg Met Ser His Ser Ser Ser Asp Thr
740 745 750

Asp Ile Asn Glu Ile His Thr Asn His Lys Thr Leu Tyr Asp Leu Lys
755 760 765

Thr Gln Ala Gly Lys Asp Asp Lys Gly Lys Arg Lys Arg Lys Ser Ser
770 775 780

077-US1.ST25.txt

Thr Ser Gly Ser Asp Phe Asp Thr Lys Lys Gly Lys Ser Ala Lys Ser
785 790 795 800

Ser Ile Ile Ser Lys Lys Lys Arg Gln Thr Gln Ser Glu Ser Ser Asn
805 810 815

Tyr Asp Ser Glu Leu Glu Lys Glu Ile Lys Ser Met Ser Lys Ile Gly
820 825 830

Ala Ala Arg Thr Thr Lys Lys Arg Ile Pro Asn Thr Lys Asp Phe Asp
835 840 845

Ser Ser Glu Asp Glu Lys His Ser Lys Lys Gly Met Asp Asn Gln Gly
850 855 860

His Lys Asn Leu Lys Thr Ser Gln Glu Gly Ser Ser Asp Asp Ala Glu
865 870 875 880

Arg Lys Gln Glu Arg Glu Thr Phe Ser Ser Ala Glu Gly Thr Val Asp
885 890 895

Lys Asp Thr Thr Ile Met Glu Leu Arg Asp Arg Leu Pro Lys Lys Gln
900 905 910

Gln Ala Ser Ala Ser Thr Asp Gly Val Asp Lys Leu Ser Gly Lys Glu
915 920 925

Gln Ser Phe Thr Ser Leu Glu Val Arg Lys Val Ala Glu Thr Lys Glu
930 935 940

Lys Ser Lys His Leu Lys Thr Lys Thr Cys Lys Lys Val Gln Asp Gly
945 950 955 960

Leu Ser Asp Ile Ala Glu Lys Phe Leu Lys Lys Asp Gln Ser Asp Glu
965 970 975

Thr Ser Glu Asp Asp Lys Lys Gln Ser Lys Lys Gly Thr Glu Glu Lys
980 985 990

Lys Lys Pro Ser Asp Phe Lys Lys Lys Val Ile Lys Met Glu Gln Gln
995 1000 1005

Tyr Glu Ser Ser Ser Asp Gly Thr Glu Lys Leu Pro Glu Arg Glu
1010 1015 1020

077-US1.ST25.txt

Glu Ile Cys His Phe Pro Lys Gly Ile Lys Gln Ile Lys Asn Gly
1025 1030 1035

Thr Thr Asp Gly Glu Lys Lys Ser Lys Lys Ile Arg Asp Lys Thr
1040 1045 1050

Ser Lys Lys Lys Asp Glu Leu Ser Asp Tyr Ala Glu Lys Ser Thr
1055 1060 1065

Gly Lys Gly Asp Ser Cys Asp Ser Ser Glu Asp Lys Lys Ser Lys
1070 1075 1080

Asn Gly Ala Tyr Gly Arg Glu Lys Lys Arg Cys Lys Leu Leu Gly
1085 1090 1095

Lys Ser Ser Arg Lys Arg Gln Asp Cys Ser Ser Ser Asp Thr Glu
1100 1105 1110

Lys Tyr Ser Met Lys Glu Asp Gly Cys Asn Ser Ser Asp Lys Arg
1115 1120 1125

Leu Lys Arg Ile Glu Leu Arg Glu Arg Arg Asn Leu Ser Ser Lys
1130 1135 1140

Arg Asn Thr Lys Glu Ile Gln Ser Gly Ser Ser Ser Asp Ala
1145 1150 1155

Glu Glu Ser Ser Glu Asp Asn Lys Lys Lys Lys Gln Arg Thr Ser
1160 1165 1170

Ser Lys Lys Lys Ala Val Ile Val Lys Glu Lys Lys Arg Asn Ser
1175 1180 1185

Leu Arg Thr Ser Thr Lys Arg Lys Gln Ala Asp Ile Thr Ser Ser
1190 1195 1200

Ser Ser Ser Asp Ile Glu Asp Asp Asp Gln Asn Ser Ile Gly Glu
1205 1210 1215

Gly Ser Ser Asp Glu Gln Lys Ile Lys Pro Val Thr Glu Asn Leu
1220 1225 1230

Val Leu Ser Ser His Thr Gly Phe Cys Gln Ser Ser Gly Asp Glu

077-US1.ST25.txt

1235 1240 1245
Ala Leu Ser Lys Ser Val Pro Val Thr Val Asp Asp Asp Asp Asp Asp
1250 1255 1260

Asp Asn Asp Pro Glu Asn Arg Ile Ala Lys Lys Met Leu Leu Glu
1265 1270 1275

Glu Ile Lys Ala Asn Leu Ser Ser Asp Glu Asp Gly Ser Ser Asp
1280 1285 1290

Asp Glu Pro Glu Glu Gly Lys Lys Arg Thr Gly Lys Gln Asn Glu
1295 1300 1305

Glu Asn Pro Gly Asp Glu Glu Ala Lys Asn Gln Val Asn Ser Glu
1310 1315 1320

Ser Asp Ser Asp Ser Glu Glu Ser Lys Lys Pro Arg Tyr Arg His
1325 1330 1335

Arg Leu Leu Arg His Lys Leu Thr Val Ser Asp Gly Glu Ser Gly
1340 1345 1350

Glu Glu Lys Lys Thr Lys Pro Lys Glu His Lys Glu Val Lys Gly
1355 1360 1365

Arg Asn Arg Arg Lys Val Ser Ser Glu Asp Ser Glu Asp Ser Asp
1370 1375 1380

Phe Gln Glu Ser Gly Val Ser Glu Glu Val Ser Glu Ser Glu Asp
1385 1390 1395

Glu Gln Arg Pro Arg Thr Arg Ser Ala Lys Lys Ala Glu Leu Glu
1400 1405 1410

Glu Asn Gln Arg Ser Tyr Lys Gln Lys Lys Lys Arg Arg Arg Ile
1415 1420 1425

Lys Val Gln Glu Asp Ser Ser Ser Glu Asn Lys Ser Asn Ser Glu
1430 1435 1440

Glu Glu Glu Glu Glu Lys Glu Glu Glu Glu Glu Glu Glu Glu
1445 1450 1455

077-US1.ST25.txt

Glu Glu Glu Glu Glu Asp Glu Asn Asp Asp Ser Lys Ser Pro
1460 1465 1470

Gly Lys Gly Arg Lys Lys Ile Arg Lys Ile Leu Lys Asp Asp Lys
1475 1480 1485

Leu Arg Thr Glu Thr Gln Asn Ala Leu Lys Glu Glu Glu Glu Arg
1490 1495 1500

Arg Lys Arg Ile Ala Glu Arg Glu Arg Glu Arg Glu Lys Leu Arg
1505 1510 1515

Glu Val Ile Glu Ile Glu Asp Ala Ser Pro Thr Lys Cys Pro Ile
1520 1525 1530

Thr Thr Lys Leu Val Leu Asp Glu Asp Glu Glu Thr Lys Glu Pro
1535 1540 1545

Leu Val Gln Val His Arg Asn Met Val Ile Lys Leu Lys Pro His
1550 1555 1560

Gln Val Asp Gly Val Gln Phe Met Trp Asp Cys Cys Cys Glu Ser
1565 1570 1575

Val Lys Lys Thr Lys Lys Ser Pro Gly Ser Gly Cys Ile Leu Ala
1580 1585 1590

His Cys Met Gly Leu Gly Lys Thr Leu Gln Val Val Ser Phe Leu
1595 1600 1605

His Thr Val Leu Leu Cys Asp Lys Leu Asp Phe Ser Thr Ala Leu
1610 1615 1620

Val Val Cys Pro Leu Asn Thr Ala Leu Asn Trp Met Asn Glu Phe
1625 1630 1635

Glu Lys Trp Gln Glu Gly Leu Lys Asp Asp Glu Lys Leu Glu Val
1640 1645 1650

Ser Glu Leu Ala Thr Val Lys Arg Pro Gln Glu Arg Ser Tyr Met
1655 1660 1665

Leu Gln Arg Trp Gln Glu Asp Gly Gly Val Met Ile Ile Gly Tyr
1670 1675 1680

077-US1.ST25.txt

Glu Met Tyr Arg Asn Leu Ala Gln Gly Arg Asn Val Lys Ser Arg
1685 1690 1695

Lys Leu Lys Glu Ile Phe Asn Lys Ala Leu Val Asp Pro Gly Pro
1700 1705 1710

Asp Phe Val Val Cys Asp Glu Gly His Ile Leu Lys Asn Glu Ala
1715 1720 1725

Ser Ala Val Ser Lys Ala Met Asn Ser Ile Arg Ser Arg Arg Arg
1730 1735 1740

Ile Ile Leu Thr Gly Thr Pro Leu Gln Asn Asn Leu Ile Glu Tyr
1745 1750 1755

His Cys Met Val Asn Phe Ile Lys Glu Asn Leu Leu Gly Ser Ile
1760 1765 1770

Lys Glu Phe Arg Asn Arg Phe Ile Asn Pro Ile Gln Asn Gly Gln
1775 1780 1785

Cys Ala Asp Ser Thr Met Val Asp Val Arg Val Met Lys Lys Arg
1790 1795 1800

Ala His Ile Leu Tyr Glu Met Leu Ala Gly Cys Val Gln Arg Lys
1805 1810 1815

Asp Tyr Thr Ala Leu Thr Lys Phe Leu Pro Pro Lys His Glu Tyr
1820 1825 1830

Val Leu Ala Val Arg Met Thr Ser Ile Gln Cys Lys Leu Tyr Gln
1835 1840 1845

Tyr Tyr Leu Asp His Leu Thr Gly Val Gly Asn Asn Ser Glu Gly
1850 1855 1860

Gly Arg Gly Lys Ala Gly Ala Lys Leu Phe Gln Asp Phe Gln Met
1865 1870 1875

Leu Ser Arg Ile Trp Thr His Pro Trp Cys Leu Gln Leu Asp Tyr
1880 1885 1890

Ile Ser Lys Glu Asn Lys Gly Tyr Phe Asp Glu Asp Ser Met Asp
1895 1900 1905

077-US1.ST25.txt

Glu Phe Ile Ala Ser Asp Ser Asp Glu Thr Ser Met Ser Leu Ser
1910 1915 1920

Ser Asp Asp Tyr Thr Lys Lys Lys Lys Gly Lys Lys Gly Lys
1925 1930 1935

Lys Asp Ser Ser Ser Gly Ser Gly Ser Asp Asn Asp Val Glu
1940 1945 1950

Val Ile Lys Val Trp Asn Ser Arg Ser Arg Gly Gly Glu Gly
1955 1960 1965

Asn Val Asp Glu Thr Gly Asn Asn Pro Ser Val Ser Leu Lys Leu
1970 1975 1980

Glu Glu Ser Lys Ala Thr Ser Ser Ser Asn Pro Ser Ser Pro Ala
1985 1990 1995

Pro Asp Trp Tyr Lys Asp Phe Val Thr Asp Ala Asp Ala Glu Val
2000 2005 2010

Leu Glu His Ser Gly Lys Met Val Leu Leu Phe Glu Ile Leu Arg
2015 2020 2025

Met Ala Glu Glu Ile Gly Asp Lys Val Leu Val Phe Ser Gln Ser
2030 2035 2040

Leu Ile Ser Leu Asp Leu Ile Glu Asp Phe Leu Glu Leu Ala Ser
2045 2050 2055

Arg Glu Lys Thr Glu Asp Lys Asp Lys Pro Leu Ile Tyr Lys Gly
2060 2065 2070

Glu Gly Lys Trp Leu Arg Asn Ile Asp Tyr Tyr Arg Leu Asp Gly
2075 2080 2085

Ser Thr Thr Ala Gln Ser Arg Lys Lys Trp Ala Glu Glu Phe Asn
2090 2095 2100

Asp Glu Thr Asn Val Arg Gly Arg Leu Phe Ile Ile Ser Thr Lys
2105 2110 2115

Ala Gly Ser Leu Gly Ile Asn Leu Val Ala Ala Asn Arg Val Ile

077-US1.ST25.txt

2120 2125 2130
Ile Phe Asp Ala Ser Trp Asn Pro Ser Tyr Asp Ile Gln Ser Ile
2135 2140 2145

Phe Arg Val Tyr Arg Phe Gly Gln Thr Lys Pro Val Tyr Val Tyr
2150 2155 2160

Arg Phe Leu Ala Gln Gly Thr Met Glu Asp Lys Ile Tyr Asp Arg
2165 2170 2175

Gln Val Thr Lys Gln Ser Leu Ser Phe Arg Val Val Asp Gln Gln
2180 2185 2190

Gln Val Glu Arg His Phe Thr Met Asn Glu Leu Thr Glu Leu Tyr
2195 2200 2205

Thr Phe Glu Pro Asp Leu Leu Asp Asp Pro Asn Ser Glu Lys Lys
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Lys Lys Arg Asp Thr Pro Met Leu Pro Lys Asp Thr Ile Leu Ala
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Glu Leu Leu Gln Ile His Lys Glu His Ile Val Gly Tyr His Glu
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His Asp Ser Leu Leu Asp His Lys Glu Glu Glu Glu Leu Thr Glu
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Glu Glu Arg Lys Ala Ala Trp Ala Glu Tyr Glu Ala Glu Lys Lys
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Val Leu Thr Met Arg Phe Asn Ile Pro Thr Gly Thr Asn Leu Pro
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Pro Val Ser Phe Asn Ser Gln Thr Pro Tyr Ile Pro Phe Asn Leu
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Gly Ala Leu Ser Ala Met Ser Asn Gln Gln Leu Glu Asp Leu Ile
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Asn Gln Gly Arg Glu Lys Val Val Glu Ala Thr Asn Ser Val Thr
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077-US1.ST25.txt

Ala Val Arg Ile Gln Pro Leu Glu Asp Ile Ile Ser Ala Val Trp
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Leu Ser Arg Gln Ala Ser Gln Glu Leu Asp Val Lys Arg Arg Glu
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Ala Ile Tyr Asn Asp Val Leu Thr Lys Gln Gln Met Leu Ile Ser
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Cys Val Gln Arg Ile Leu Met Asn Arg Arg Leu Gln Gln Gln Tyr
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Asn Gln Gln Gln Gln Gln Met Thr Tyr Gln Gln Ala Thr Leu
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Gly His Leu Met Met Pro Lys Pro Pro Asn Leu Ile Met Asn Pro
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Ser Asn Tyr Gln Gln Ile Asp Met Arg Gly Met Tyr Gln Pro Val
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077-US1.ST25.txt

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